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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/052,249	01/23/2002	Alan M. Meier	08215-477001	1918

26171 7590 04/09/2003

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EXAMINER

NGUYEN, DONGHAI D

ART UNIT	PAPER NUMBER
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3729

DATE MAILED: 04/09/2003

10

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/052,249

Applicant(s)

MEIER ET AL.

Examiner

Donghai D. Nguyen

Art Unit

3729

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 January 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-42 is/are pending in the application.
- 4a) Of the above claim(s) 1-13, 27-39 and 42 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 14-28, 40 and 41 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 March 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Art Unit: 3729

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Group I (claims 14-26, and 40-41) in Paper No. 8 is acknowledged. Claims 14 and 40 are generic to Species 1, but not Species 2, because the silver-based composition is required to apply on only one ceramic component.

Drawings

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "175" has been used to designate both "the inner surface" and "a ground lead disconnecter". A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

3. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: "A METHOD OF JOINING CERAMIC COMPONENTS USING A SILVER-BASED COMPOSITION".

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Art Unit: 3729

5. Claims 14-18, 20-21, 24, 26, and 40-41 are rejected under 35 U.S.C. 102(b) as being anticipated by US Patent 5,720,859 to Czubarow et al.

Regarding claims 14 and 40, Czubarow et al disclose a method of joining ceramic components (1) using a silver-based composition (2), the silver-based composition being a mixture of silver metal (Col. 6, line 28-29) and a metal oxide (col. 6, lines 14-16), the method comprising: applying/placing the silver-based composition to the surface of the first ceramic component (Fig. 1); contacting/joining the silver-based composition on first ceramic component to the surface of second ceramic component (Fig. 2); heating (col. 2, lines 46-51); and cooling (inherence) the surfaces of the first and second ceramic components (Col. 4, lines 65-67).

Regarding claim 15-18, Czubarow et al disclose the first and second ceramic components comprise a varistor and metal oxide varistor (Col. 3, lines 35-36).

Regarding claims 20, 21 and 24, Czubarow et al disclose the silver-based composition melts at a low temperature than melting point of the ceramic and between 900 °C and 1000 °C (inherence because the melting point of silver is about 930 °C). It is inherence to compress the ceramic components together before heating for bonding them together.

Regarding claim 26, Czubarow et al disclose the heating step carry out in an air atmosphere or in near air atmosphere (Col. 2, lines 11-12).

Regarding claim 41, see Fig. 1.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 3729

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 22-23 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Czubarow et al in view of US Patent 4,369,063 to McGowan.

Regarding claims 22 and 23, Czubarow et al disclose the silver-based composition is a mixture of silver metal and metal oxide, except that the metal oxide is vanadium and the silver-based composition comprises approximately between 0.1 to 10% vanadium oxide by weight. However, McGowan teaches that the silver-based compositions comprising approximately between 0.1 to 10% vanadium oxide by weight (Col. 2, line 38-41 and Col. 3, lines 10-13) for bonding silver to ceramic (Col. 2, lines, 34-36). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Czubarow et al's silver-based composition comprising approximately between 0.1 to 10% vanadium oxide by weight as taught by McGowan for increasing bonding strength.

Regarding claim 25, Czubarow et al disclose the applying the of silver-based composition to ceramic component, except the claim limitation in claim 25. However, McGowan teaches the steps of: preparing the metal oxide and the silver (Col. 2, lines 25 and 57); mixing them to form a silver-based composition paste (Col. 3, lines 10-14 and line 40); and spreading the silver composition paste on the ceramic component (Col. 3, lines 44-48) for enhance bonding strength, solderability and abrasion (col. 1, lines 7-9). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Czubarow et al step of applying silver-based composition to the ceramic component by preparing, mixing and spreading silver-based as taught by McGowan for increase bonding strength.

Art Unit: 3729

Allowable Subject Matter

8. Claim 19 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Donghai D. Nguyen whose telephone number is (703) 305-7859. The examiner can normally be reached on Monday-Friday (9:00-6:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Vo can be reached on (703) 308-1789. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-7307 for regular communications and (703) 305-3579 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1148.

DN
March 31, 2003



PETER VO
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3700